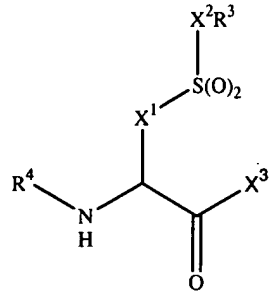
WE CLAIM:

1. A compound of Formula I:



I

in which:

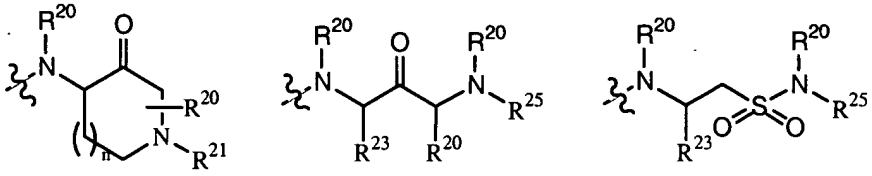
X^1 and X^2 are both methylene or X^1 is ethylene and X^2 is a bond;

R^3 is $-CR^5=CHR^6$, $-CR^5(CR^6_3)_2$ or $-CR^7=NR^8$, wherein R^5 is hydrogen and R^6 is hydrogen or (C_{1-4})alkyl or R^5 and R^6 together with the atoms to which R^5 and R^6 are attached form (C_{3-12})cycloalkenyl, hetero(C_{5-12})cycloalkenyl, (C_{6-12})aryl, hetero(C_{6-12})aryl, (C_{9-12})bicycloaryl or hetero(C_{8-12})bicycloaryl and R^7 and R^8 together with the atoms to which R^7 and R^8 are attached form hetero(C_{5-12})cycloalkenyl, hetero(C_{6-12})aryl or hetero(C_{8-12})bicycloaryl, wherein R^3 optionally is substituted by 1 to 5 radicals independently selected from a group consisting of (C_{1-4})alkyl, cyano, halo, halo-substituted (C_{1-4})alkyl, nitro, $-X^4NR^9R^9$, $-X^4OR^9$, $-X^4SR^9$, $-X^4C(O)NR^9R^9$, $-X^4C(O)OR^9$, $-X^4S(O)R^{10}$, $-X^4S(O)_2R^{10}$ and $-X^4C(O)R^{10}$, wherein X^4 is a bond or (C_{1-2})alkylene, R^9 at each occurrence independently is hydrogen, (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl and R^{10} is (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl; and

R^4 is $-C(O)X^5R^{11}$ or $-S(O)_2X^5R^{11}$, wherein X^5 is a bond, -O- or $-NR^{12}-$, wherein R^{12} is hydrogen or (C_{1-6})alkyl, and R^{11} is (i) (C_{1-6})alkyl optionally substituted by $-OR^{13}$, $-SR^{13}$, $-S(O)R^{13}$, $-S(O)_2R^{13}$, $-C(O)R^{13}$, $-C(O)OR^{13}$, $-C(O)NR^{13}R^{14}$, $-NR^{13}R^{14}$, $-NR^{14}C(O)R^{13}$, $-NR^{14}C(O)OR^{13}$, $-NR^{14}C(O)NR^{13}R^{14}$ or $-NR^{14}C(NR^{14})NR^{13}R^{14}$, wherein R^{13} is (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl and R^{14} at each occurrence independently is hydrogen or (C_{1-6})alkyl, or (ii) (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl or (iii) (C_{3-6})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl substituted by $-X^6OR^{15}$, $-X^6SR^{15}$, $-X^6S(O)R^{15}$, $-X^6S(O)_2R^{15}$, $-X^6C(O)R^{15}$, $-X^6C(O)OR^{15}$, $-X^6C(O)NR^{15}R^{16}$, $-X^6NR^{15}R^{16}$, $-X^6NR^{16}C(O)R^{15}$, $-X^6NR^{16}C(O)OR^{15}$, $-X^6NR^{16}C(O)NR^{15}R^{16}$, $-X^6NR^{16}C(O)OR^{16}$, $-X^6NR^{16}C(NR^{16})NR^{15}R^{16}$, wherein X^6 is a bond or methylene, R^{15} is (C_{3-6})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl and R^{16} is hydrogen or (C_{1-6})alkyl; wherein R^4 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, $-X^6NR^{17}R^{17}$, $-X^6NR^{17}C(O)OR^{17}$, $-X^6NR^{17}C(O)NR^{17}R^{17}$, $-X^6NR^{17}C(NR^{17})NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6SR^{17}$, $-X^6C(O)OR^{17}$, $-X^6C(O)NR^{17}R^{17}$, $-X^6S(O)_2NR^{17}R^{17}$, $-X^6P(O)(OR^{18})OR^{17}$, $-X^6OP(O)(OR^{18})OR^{17}$, $-X^6NR^{17}C(O)R^{18}$, $-X^6S(O)R^{18}$, $-X^6S(O)_2R^{18}$ and $-X^6C(O)R^{18}$ and when occurring within an aliphatic moiety are radicals independently selected from a group

consisting of cyano, halo, nitro, $-NR^{17}R^{17}$, $-NR^{17}C(O)OR^{17}$, $-NR^{17}C(O)NR^{17}R^{17}$, $-NR^{17}C(NR^{17})NR^{17}R^{17}$, $-OR^{17}$, $-SR^{17}$, $-C(O)OR^{17}$, $-C(O)NR^{17}R^{17}$, $-S(O)_2NR^{17}R^{17}$, $-P(O)(OR^{17})OR^{17}$, $-OP(O)(OR^{17})OR^{17}$, $-NR^{17}C(O)R^{18}$, $-S(O)R^{18}$, $-S(O)_2R^{18}$ and $-C(O)R^{18}$, wherein X^6 is a bond or (C_{1-6})alkylene, R^{17} at each occurrence independently is hydrogen, (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl and R^{18} is (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl;

X^3 is a group of Formula (a), (b) or (c):



(a) (b) (c)

n is 0, 1 or 2;

R^{20} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl and hetero(C_{5-12})aryl(C_{0-6})alkyl;

R^{21} is selected from the group consisting of hydrogen, (C_{1-9})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl, hetero(C_{8-12})-bicycloaryl(C_{0-3})alkyl, $-C(O)R^{26}$, $-C(S)R^{26}$, $-S(O)_2R^{26}$, $-C(O)OR^{26}$, $-C(O)N(R^{26})R^{27}$, $-C(S)N(R^{26})R^{27}$ and $-S(O)_2N(R^{27})R^{26}$;

R^{23} is selected from (C_{1-6})alkyl, (C_{4-6})alkenyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl

optionally substituted with amino, -NHC(O)R^{15} or –R^{15} wherein R^{15} is as described above;

R^{25} is selected from hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-13})aryl(C_{0-6})alkyl, -X^4NHR^{15}, -X^4S(O)$_2R^{26}$ or -X^4C(O)R^{17}NR^{17}C(O)R^{17} wherein R^{15}, R^{17} and X^4 are as described above;

R^{26} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})-bicycloaryl(C_{0-3})alkyl;

R^{27} is hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl;

wherein X^3 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, -X^6NR$^{17}R^{17}$, -X^6NR^{17}C(O)OR^{17}, -X^6NR^{17}C(O)NR$^{17}R^{17}$, -X^6NR^{17}C(NR^{17})NR$^{17}R^{17}$, -X^6OR^{17}, -X^6C(O)R^{17}, -X^6OR^{15}, -X^6SR^{17}, -X^6C(O)OR^{17}, -X^6C(O)NR$^{17}R^{17}$, -X^6S(O)$_2$NR$^{17}R^{17}$, -X^6P(O)(OR^8)OR^{17}, -X^6OP(O)(OR^8)OR^{17}, -X^6NR^{17}C(O)R^{18}, -X^6S(O)R^{18}, -X^6S(O)$_2R^{18}$ and -X^6C(O)R^{18} and when occurring within an aliphatic moiety are radicals independently selected from a group consisting of cyano, halo, nitro, -NR$^{17}R^{17}$, -NR^{17}C(O)OR^{17}, -NR^{17}C(O)NR$^{17}R^{17}$, -NR^{17}C(NR^{17})NR$^{17}R^{17}$, -OR^{17}, -SR^{17}, -C(O)OR^{17}, -C(O)NR$^{17}R^{17}$, -S(O)$_2$NR$^{17}R^{17}$, -P(O)(OR^{17})OR^{17}, -OP(O)(OR^{17})OR^{17}, -NR^{17}C(O)R^{18}, -S(O)R^{18}, -S(O)$_2R^{18}$ and -C(O)R^{18}, wherein R^{15}, R^{17}, R^{18} and X^6 are as described above; and the *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof; and the

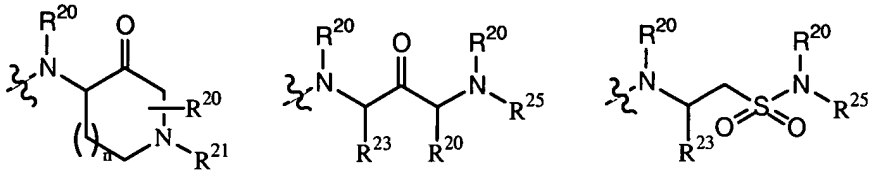
pharmaceutically acceptable salts and solvates of such compounds and the N-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof.

2. The compound of claim 1 in which X^1 and X^2 are both methylene or X^1 is ethylene and X^2 is a bond; R^3 is $-CR^5=CHR^6$, $-CR^5(CR^6_3)_2$ or $-CR^7=NR^8$, wherein R^5 is hydrogen and R^6 is hydrogen or (C_{1-4})alkyl or R^5 and R^6 together with the atoms to which R^5 and R^6 are attached form (C_{3-12})cycloalkenyl, (C_{6-12})aryl, hetero(C_{6-12})aryl or (C_{9-12})bicycloaryl and R^7 and R^8 together with the atoms to which R^7 and R^8 are attached form hetero(C_{5-12})cycloalkenyl or hetero(C_{6-12})aryl, wherein R^3 optionally is substituted by 1 to 5 radicals independently selected from a group consisting of (C_{1-4})alkyl, cyano, halo, halo-substituted (C_{1-4})alkyl, $-X^4OR^9$ and $-X^4C(O)OR^9$, wherein X^4 is a bond or (C_{1-2})alkylene, R^9 at each occurrence independently is (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl; and the *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof; and the pharmaceutically acceptable salts and solvates of such compounds and the N-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof.

3. The compound of claim 2 in which R^4 is $-C(O)X^5R^{11}$ or $-S(O)_2X^5R^{11}$, wherein X^5 is a bond, $-O-$ or $-NR^{12}-$, wherein R^{12} is hydrogen or (C_{1-6})alkyl, and R^{11} is (i) (C_{1-6})alkyl or (ii) hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl or (iii) hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl or phenyl(C_{0-3})alkyl substituted by $-X^6OR^{15}$, $-X^6C(O)R^{15}$ or $-X^6NR^{16}C(O)OR^{16}$, wherein X^6 is a bond or methylene, R^{15} is phenyl(C_{0-3})alkyl or

hetero(C_{5-6})aryl(C_{0-3})alkyl and R^{16} is hydrogen or (C_{1-6})alkyl; wherein R^4 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, halo, $-X^6NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6C(O)OR^{17}$, $-X^6NC(O)R^{16}$ and $-X^6C(O)R^{18}$, R^{17} at each occurrence independently is hydrogen, (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl and R^{18} is (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl; and the *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof; and the pharmaceutically acceptable salts and solvates of such compounds and the N-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof.

4. The compound of claim 3 in which X^3 is a group of Formula (a), (b) or (c):



(a) (b) (c)

n is 0, 1 or 2;

R^{20} is selected from the group consisting of hydrogen and (C_{1-6})alkyl;

R^{21} is selected from the group consisting of (C_{1-9})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, $-C(O)R^{26}$, $-S(O)_2R^{26}$, $-C(O)OR^{26}$ and $-C(O)N(R^{26})R^{27}$;

R^{23} is selected from (C_{1-6})alkyl optionally substituted with amino, $-NHC(O)R^{15}$ or $-R^{15}$ wherein R^{15} is as described above;

R^{25} is selected from (C_{1-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, $-X^4S(O)_2R^{26}$ or $-X^4C(O)R^{17}NR^{17}C(O)R^{17}$ wherein R^{17} and X^4 are as described above and R^{26} is as described below;

R^{26} is selected from the group consisting of (C_{1-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl and (C_{9-12})bicycloaryl(C_{0-3})alkyl;

R^{27} is (C_{1-6})alkyl;

wherein X^3 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, cyano, halo, $-X^6OR^{17}$, $-X^6C(O)R^{17}$ and $-X^6OR^{15}$; and the *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof; and the pharmaceutically acceptable salts and solvates of such compounds and the N-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof.

5. The compound of claim 4 in which R^3 is selected from the group consisting of phenyl, pyridin-2-yl, pyridin-3-yl, pyridin-4-yl, vinyl, 2-difluoromethoxyphenyl, 1-oxy-pyridin-2-yl, 4-methoxyphenyl, 4-methylphenyl, 2-methylphenyl, 4-chlorophenyl, 3,5-dimethylphenyl, 4-trifluoromethylphenyl, 4-trifluoromethoxyphenyl, 2-bromophenyl, naphthalen-2-yl, 3,4-dichlorophenyl, 3-methylphenyl, 3-trifluoromethylphenyl, 3-trifluoromethoxyphenyl, 2,3,4,5,6-pentafluoro-phenyl, 2-fluorophenyl, 2-chlorophenyl, 2-cyano-phenyl, 2-trifluoromethylphenyl, 4-*tert*-butyl-phenyl, 3-chlorophenyl, 4-bromophenyl, 2-fluoro-3-chloro-phenyl, 2-fluoro-3-methyl-phenyl, 3-fluorophenyl, 2,5-difluorophenyl, 3-bromophenyl, 2,5-dichlorophenyl, 2,6-difluorophenyl, 3-cyano-phenyl,

4-cyano-phenyl, 2-trifluoromethoxyphenyl, 2,3-difluorophenyl, biphenyl, 2-bromo-5-fluoro-phenyl, 4-fluorophenyl, 3,4-difluorophenyl, 2,4-difluorophenyl, 2,4,6-trifluorophenyl, 2,4,5-trifluorophenyl, 2,3,4-trifluorophenyl, 2-chloro-5-trifluoromethylphenyl, 2,4-bis-trifluoromethylphenyl, 2,5,6-trifluorophenyl, 2-fluoro-3-trifluoromethylphenyl, 2-fluoro-4-trifluoromethylphenyl, 2-fluoro-5-trifluoromethylphenyl, 2,3,5-trifluorophenyl, 2-fluoro-5-trifluoromethylphenyl, 5-fluoro-2-trifluoromethylphenyl, 4-fluoro-3-trifluoromethylphenyl, 2-methoxyphenyl, 3,5-bis-trifluoromethylphenyl, 4-difluoromethoxyphenyl, 3-difluoromethoxyphenyl, 2,6-dichlorophenyl, 4-carboxyphenyl, cyclohexyl, cyclopropyl, isopropyl, thiophen-2-yl, 5-chloro-thiophen-2-yl and 3,5-dimethyl-isoxazol-4-yl.

6. The compound of claim 5 in which R^4 is benzoyl, morpholine-4-carbonyl, acetyl, furan-3-carbonyl, 2-methoxy-benzoyl, 3-methoxy-benzoyl, naphthalene-2-carbonyl, benzo[1,3]dioxole-5-carbonyl, 3-pyridin-3-yl-acryloyl, benzofuran-2-carbonyl, furan-2-carbonyl, *tert*-butoxy-carbonyl, biphenyl-4-carbonyl, quinoline-2-carbonyl, quinoline-3-carbonyl, 3-acetyl-benzoyl, 4-phenoxy-benzoyl, 3-hydroxy-benzoyl, 4-hydroxy-benzoyl, pyridine-3-carbonyl, 3-(tert-butoxycarbonylamino-methyl)-benzoyl, 4-carbonyl-piperazine-1-carboxylic acid tert-butyl ester, 4-carbonyl-piperazine-1-carboxylic acid ethyl ester, 4-(furan-2-carbonyl)-piperazine-1-carbonyl, pyridine-4-carbonyl, 1-oxy-pyridine-4-carbonyl, 1-oxy-pyridine-3-carbonyl, thiophene-2-carbonyl, thiophene-3-carbonyl, 4-benzoyl-benzoyl, 5-methyl-thiophene-2-carbonyl, 3-chloro-thiophene-2-carbonyl, 3-bromo-thiophene-2-carbonyl, 4-chloro-benzoyl, 3-flouro-4-methoxy-benzoyl, 4-methoxy-benzoyl, 4-triflouromethoxy-benzoyl, 3,4-diflouro-benzoyl, 4-fluoro-benzoyl, 3,4-dimethoxy-benzoyl, 3-methyl-benzoyl, 4-bromo-benzoyl, 4-triflouromethyl-benzoyl, 3-benzoyl-

benzoyl, cyclopentane-carbonyl, benzo[b]thiophene-2-carbonyl, 3-chloro-benzo[b]thiophene-2-carbonyl, benzenesulfonyl, naphthalene-2-sulfonyl, 5-methyl-thiophene-2-sulfonyl, thiophene-2-sulfonyl, formamyl-methyl ester, 4-methyl-pentanoyl, formamyl-isobutyl ester, formamyl-monoallyl ester, formamyl-isopropyl ester, *N,N*-dimethyl-formamyl, *N*-isopropyl-formamyl, *N*-pyridin-4-yl-formamyl, *N*-pyridin-3-yl-formamyl, 3-phenyl-acryloyl, 1H-indole-5-carbonyl, pyridine-2-carbonyl, pyrazine-2-carbonyl, 3-hydroxy-pyridine-2-carbonyl, 2-amino-pyridine-3-carbonyl, 2-hydroxy-pyridine-3-carbonyl, 6-amino-pyridine-3-carbonyl, 6-hydroxy-pyridine-3-carbonyl, pyridazine-4-carbonyl, 3-phenoxy-benzoyl and 1-oxo-1,3-dihydro-isoindole-2-carbonyl.

7. The compound of claim 6 in which X^3 is selected from a group consisting of 4-amino-3-oxo-azepane-1-carboxylic acid benzyl ester, 4-amino-3-oxo-azepane-1-carboxylic acid isobutyl ester, 4-amino-1-benzoyl-azepan-3-one, 4-amino-1-benzenesulfonyl-azepan-3-one, 4-amino-1-(pyridine-2-sulfonyl)-azepan-3-one, 4-amino-1-(1-oxy-pyridine-2-sulfonyl)-azepan-3-one, 4-amino-1-(3,4-dichloro-benzenesulfonyl)-azepan-3-one, 4-amino-1-(2-flouro-benzenesulfonyl)-azepan-3-one, 4-amino-1-(3,4-dimethoxy-benzenesulfonyl)-azepan-3-one, 4-amino-1-(2-cyano-benzenesulfonyl)-azepan-3-one, 4-amino-1-(naphthalene-1-sulfonyl)-azepan-3-one, 4-amino-1-(thiophene-2-sulfonyl)-azepan-3-one, 4-amino-1-(thiazole-2-sulfonyl)-azepan-3-one, 4-amino-1-(pyrrolidine-1-sulfonyl)-azepan-3-one, 4-amino-1-methanesulfonyl-azepan-3-one, 4-amino-1-(pyrrolidine-1-carbonyl)-azepan-3-one, 4-amino-3-oxo-azepane-1-carboxylic-acid-dimethylamide, 4-amino-3-oxo-azepane-1-carboxylic-acid-benzylamide, 4-amino-1-benzyl-azepan-3-one, 4-amino-1-benzyl-piperidin-3-one, 4-amino-1-benzoyl-piperidin-3-one, 4-amino-1-benzoyl-pyrrolidin-3-one, 4-amino-1-benzyl-pyrrolidin-3-one, 4-amino-1-benzenesulfonyl-

pyrrolidin-3-one, 4-amino-1-(5-methyl-hexyl)-pyrrolidin-3-one, 1-ethyl-2-oxo-3-(toluene-4-sulfonylamino)-butylamino, 1-ethyl-2-oxo-3-(4-phenoxy-benzenesulfonylamino)-propylamino, 1-ethyl-2-oxo-3-[4-(pyridin-3-yloxy)-benzenesulfonylamino]-propylamino, 3-(dibenzofuran-2-sulfonylamino)-1-ethyl-2-oxo-butylamino, 1-ethyl-3-[4-methyl-2-(4-methyl-pentanoylamino)-pentanoylamino]-2-oxo-propylamino, 5-amino-1-[(4-methoxy-phenylsulfamoyl)-methyl]-pentylamino, 5-benzyloxycarbonylamino-1-[(4-methoxy-phenylsulfamoyl)-methyl]-pentylamino, 1-[(4-methoxy-phenylsulfamoyl)-methyl]-3-phenyl-propylamino, 1-{[4-(1-hydroxy-ethyl)-phenylsulfamoyl]-methyl}-3-phenyl-propylamino, 1-[(4-acetyl-phenylsulfamoyl)-methyl]-3-phenyl-propylamino, 1-[(4-hydroxy-phenylsulfamoyl)-methyl]-3-phenyl-propylamino and 3-phenyl-1-[(2-phenylamino-ethylsulfamoyl)-methyl]-propylamino.

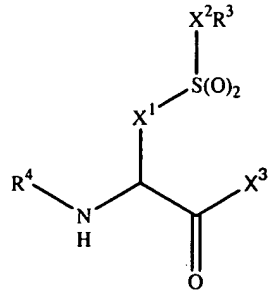
8. The compound of claim 7 selected from the group consisting of morpholine-4-carboxylic acid (1-{5-amino-1-[(4-methoxy-phenylsulfamoyl)-methyl]-pentylcarbamoyl}-2-phenylmethanesulfonyl-ethyl)-amide, (6-(4-methoxy-phenylsulfamoyl)-5-{2-[(morpholine-4-carbonyl)-amino]-3-phenylmethane-sulfonyl-propionylamino}-hexyl)-carbamic acid benzyl ester, morpholine-4-carboxylic acid (1-{1-[(4-methoxy-phenylsulfamoyl)-methyl]-3-phenyl-propylcarbamoyl}-2-phenylmethanesulfonyl-ethyl)-amide, morpholine-4-carboxylic acid [1-(3-benzenesulfonylamino-2-oxo-propylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide, morpholine-4-carboxylic acid [1-(1-benzoyl-4-oxo-pyrrolidin-3-ylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide, morpholine-4-carboxylic acid [1-(1-benzenesulfonyl-4-oxo-pyrrolidin-3-ylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide and 4-{2-[(Morpholine-4-carbonyl)-amino]-3-phenylmethanesulfonyl-propionylamino}-3-oxo-azepane-1-carboxylic acid benzyl ester.

9. A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 in combination with a pharmaceutically acceptable excipient.

10. A method for treating a disease in an animal in which inhibition of Cathepsin S can prevent, inhibit or ameliorate the pathology and/or symptomology of the disease, which method comprises administering to the animal a therapeutically effective amount of compound of Claim 1 or a *N*-oxide derivative or individual isomer or mixture of isomers thereof; or a pharmaceutically acceptable salt or solvate of such compounds and the *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers thereof.

11. The use of a compound of Claim 1 in the manufacture of a medicament for treating a disease in an animal in which Cathepsin S activity contributes to the pathology and/or symptomology of the disease.

12. A process for preparing a compound of Formula I:



I

in which:

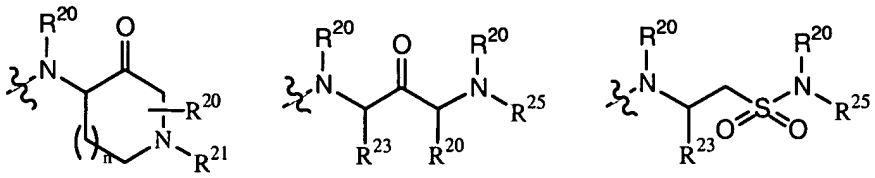
X^1 and X^2 are both methylene or X^1 is ethylene and X^2 is a bond;

R^3 is $-CR^5=CHR^6$, $-CR^5(CR^6_3)_2$ or $-CR^7=NR^8$, wherein R^5 is hydrogen and R^6 is hydrogen or (C_{1-4})alkyl or R^5 and R^6 together with the atoms to which R^5 and R^6 are attached form (C_{3-12})cycloalkenyl, hetero(C_{5-12})cycloalkenyl, (C_{6-12})aryl, hetero(C_{6-12})aryl, (C_{9-12})bicycloaryl or hetero(C_{8-12})bicycloaryl and R^7 and R^8 together with the atoms to which R^7 and R^8 are attached form hetero(C_{5-12})cycloalkenyl, hetero(C_{6-12})aryl or hetero(C_{8-12})bicycloaryl, wherein R^3 optionally is substituted by 1 to 5 radicals independently selected from a group consisting of (C_{1-4})alkyl, cyano, halo, halo-substituted (C_{1-4})alkyl, nitro, $-X^4NR^9R^9$, $-X^4OR^9$, $-X^4SR^9$, $-X^4C(O)NR^9R^9$, $-X^4C(O)OR^9$, $-X^4S(O)R^{10}$, $-X^4S(O)_2R^{10}$ and $-X^4C(O)R^{10}$, wherein X^4 is a bond or (C_{1-2})alkylene, R^9 at each occurrence independently is hydrogen, (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl and R^{10} is (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl; and

R^4 is $-C(O)X^5R^{11}$ or $-S(O)_2X^5R^{11}$, wherein X^5 is a bond, $-O-$ or $-NR^{12}-$, wherein R^{12} is hydrogen or (C_{1-6})alkyl, and R^{11} is (i) (C_{1-6})alkyl optionally substituted by $-OR^{13}$, $-SR^{13}$, $-S(O)R^{13}$, $-S(O)_2R^{13}$, $-C(O)R^{13}$, $-C(O)OR^{13}$, $-C(O)NR^{13}R^{14}$, $-NR^{13}R^{14}$, $-NR^{14}C(O)R^{13}$, $-NR^{14}C(O)OR^{13}$, $-NR^{14}C(O)NR^{13}R^{14}$ or $-NR^{14}C(NR^{14})NR^{13}R^{14}$, wherein R^{13} is (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl and R^{14} at each occurrence independently is hydrogen or (C_{1-6})alkyl, or (ii) (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl or (iii) (C_{3-6})cycloalkyl(C_{0-3})alkyl,

hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl substituted by $-X^6OR^{15}$, $-X^6SR^{15}$, $-X^6S(O)R^{15}$, $-X^6S(O)_2R^{15}$, $-X^6C(O)R^{15}$, $-X^6C(O)OR^{15}$, $-X^6C(O)NR^{15}R^{16}$, $-X^6NR^{15}R^{16}$, $-X^6NR^{16}C(O)R^{15}$, $-X^6NR^{16}C(O)OR^{15}$, $-X^6NR^{16}C(O)NR^{15}R^{16}$, $-X^6NR^{16}C(O)OR^{16}$, $-X^6NR^{16}C(NR^{16})NR^{15}R^{16}$, wherein X^6 is a bond or methylene, R^{15} is (C_{3-6})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl and R^{16} is hydrogen or (C_{1-6})alkyl; wherein R^4 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, $-X^6NR^{17}R^{17}$, $-X^6NR^{17}C(O)OR^{17}$, $-X^6NR^{17}C(O)NR^{17}R^{17}$, $-X^6NR^{17}C(NR^{17})NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6SR^{17}$, $-X^6C(O)OR^{17}$, $-X^6C(O)NR^{17}R^{17}$, $-X^6S(O)_2NR^{17}R^{17}$, $-X^6P(O)(OR^{18})OR^{17}$, $-X^6OP(O)(OR^{18})OR^{17}$, $-X^6NR^{17}C(O)R^{18}$, $-X^6S(O)R^{18}$, $-X^6S(O)_2R^{18}$ and $-X^6C(O)R^{18}$ and when occurring within an aliphatic moiety are radicals independently selected from a group consisting of cyano, halo, nitro, $-NR^{17}R^{17}$, $-NR^{17}C(O)OR^{17}$, $-NR^{17}C(O)NR^{17}R^{17}$, $-NR^{17}C(NR^{17})NR^{17}R^{17}$, $-OR^{17}$, $-SR^{17}$, $-C(O)OR^{17}$, $-C(O)NR^{17}R^{17}$, $-S(O)_2NR^{17}R^{17}$, $-P(O)(OR^{17})OR^{17}$, $-OP(O)(OR^{17})OR^{17}$, $-NR^{17}C(O)R^{18}$, $-S(O)R^{18}$, $-S(O)_2R^{18}$ and $-C(O)R^{18}$, wherein X^6 is a bond or (C_{1-6})alkylene, R^{17} at each occurrence independently is hydrogen, (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl and R^{18} is (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl;

X^3 is a group of Formula (a), (b) or (c):



(a) (b) (c)

n is 0, 1 or 2;

R^{20} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl and hetero(C_{5-12})aryl(C_{0-6})alkyl;

R^{21} is selected from the group consisting of hydrogen, (C_{1-9})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl, hetero(C_{8-12})-bicycloaryl(C_{0-3})alkyl, $-C(O)R^{26}$, $-C(S)R^{26}$, $-S(O)_2R^{26}$, $-C(O)OR^{26}$, $-C(O)N(R^{26})R^{27}$, $-C(S)N(R^{26})R^{27}$ and $-S(O)_2N(R^{27})R^{26}$;

R^{23} is selected from (C_{1-6})alkyl, (C_{4-6})alkenyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl optionally substituted with amino, $-NHC(O)R^{15}$ or $-R^{15}$ wherein R^{15} is as described above;

R^{25} is selected from hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-13})aryl(C_{0-6})alkyl, $-X^4NHR^{15}$, $-X^4S(O)_2R^{26}$ or $-X^4C(O)R^{17}NR^{17}C(O)R^{17}$ wherein R^{15}, R^{17} and X^4 are as described above;

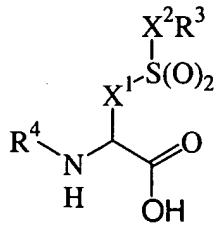
R^{26} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl and hetero(C_{8-12})-

bicycloaryl(C_{0-3})alkyl;

R^{27} is hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl;

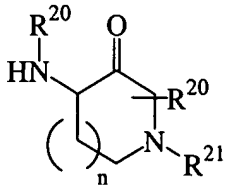
wherein X^3 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, $-X^6NR^{17}R^{17}$, $-X^6NR^{17}C(O)OR^{17}$, $-X^6NR^{17}C(O)NR^{17}R^{17}$, $-X^6NR^{17}C(NR^{17})NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6C(O)R^{17}$, $-X^6OR^{15}$, $-X^6SR^{17}$, $-X^6C(O)OR^{17}$, $-X^6C(O)NR^{17}R^{17}$, $-X^6S(O)_2NR^{17}R^{17}$, $-X^6P(O)(OR^8)OR^{17}$, $-X^6OP(O)(OR^8)OR^{17}$, $-X^6NR^{17}C(O)R^{18}$, $-X^6S(O)R^{18}$, $-X^6S(O)_2R^{18}$ and $-X^6C(O)R^{18}$ and when occurring within an aliphatic moiety are radicals independently selected from a group consisting of cyano, halo, nitro, $-NR^{17}R^{17}$, $-NR^{17}C(O)OR^{17}$, $-NR^{17}C(O)NR^{17}R^{17}$, $-NR^{17}C(NR^{17})NR^{17}R^{17}$, $-OR^{17}$, $-SR^{17}$, $-C(O)OR^{17}$, $-C(O)NR^{17}R^{17}$, $-S(O)_2NR^{17}R^{17}$, $-P(O)(OR^{17})OR^{17}$, $-OP(O)(OR^{17})OR^{17}$, $-NR^{17}C(O)R^{18}$, $-S(O)R^{18}$, $-S(O)_2R^{18}$ and $-C(O)R^{18}$, wherein R^{15}, R^{17}, R^{18} and X^6 are as described above; said process comprising:

(A) reacting a compound of Formula 2:



2

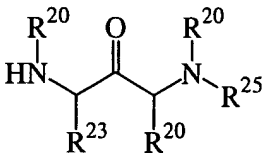
with a compound of the formula (a):



(a)

in which X^1, X^2, R^3, R^4, R^{20} and R^{21} are as defined in the Summary of the Invention for Formula I; or

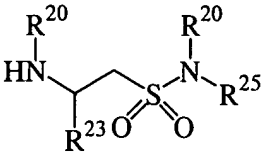
(B) reacting a compound of Formula 2 with a compound of the formula (b):



(b)

in which R^{20}, R^{23} and R^{25} are as defined in the Summary of the Invention for Formula I; or

(C) reacting a compound of Formula 2 with a compound of the formula (c):



(c)

in which R^{20}, R^{23} and R^{25} are as defined in the Summary of the Invention for Formula I; and

(D) optionally converting a compound of Formula I into a pharmaceutically acceptable salt;

(E) optionally converting a salt form of a compound o f Formula I to non-salt form;

(F) optionally converting an unoxidized form of a compound of Formula I into a pharmaceutically acceptable *N*-oxide;

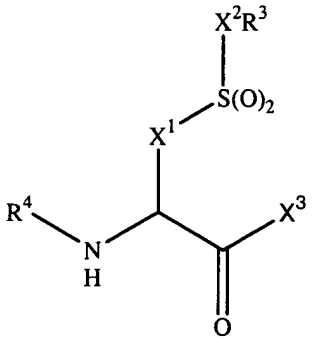
(G) optionally converting an *N*-oxide form of a compound of Formula I its unoxidized form;

(H) optionally resolving an individual isomer of a compound of Formula I from a mixture of isomers;

(I) optionally converting a non-derivatized compound of Formula I into a pharmaceutically prodrug derivative; and

(J) optionally converting a prodrug derivative of a compound of Formula I to its non-derivatized form.

13. A compound of Formula Ix:



Ix

in which:

X^1 and X^2 are both methylene or X^1 is ethylene and X^2 is a bond;

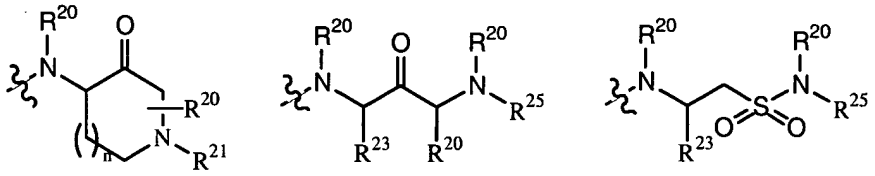
R^3 is $-CR^5=CHR^6$, $-CR^5(CR^6{}_3)_2$ or $-CR^7=NR^8$, wherein R^5 is hydrogen and R^6 is

hydrogen or (C_{1-4})alkyl or R^5 and R^6 together with the atoms to which R^5 and R^6 are attached form (C_{3-12})cycloalkenyl, hetero(C_{5-12})cycloalkenyl, (C_{6-12})aryl, hetero(C_{6-12})aryl, (C_{9-12})bicycloaryl or hetero(C_{8-12})bicycloaryl and R^7 and R^8 together with the atoms to which R^7 and R^8 are attached form hetero(C_{5-12})cycloalkenyl, hetero(C_{6-12})aryl or hetero(C_{8-12})bicycloaryl, wherein R^3 optionally is substituted by 1 to 5 radicals independently selected from a group consisting of (C_{1-4})alkyl, cyano, halo, halo-substituted (C_{1-4})alkyl, nitro, $-X^4NR^9R^9$, $-X^4OR^9$, $-X^4SR^9$, $-X^4C(O)NR^9R^9$, $-X^4C(O)OR^9$, $-X^4S(O)R^{10}$, $-X^4S(O)_2R^{10}$ and $-X^4C(O)R^{10}$, wherein X^4 is a bond or (C_{1-2})alkylene, R^9 at each occurrence independently is hydrogen, (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl and R^{10} is (C_{1-3})alkyl or halo-substituted (C_{1-3})alkyl; and

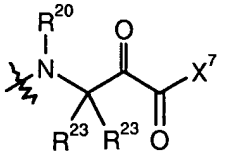
R^4 is $-C(O)X^5R^{11}$ or $-S(O)_2X^5R^{11}$, wherein X^5 is a bond, -O- or $-NR^{12}$-, wherein R^{12} is hydrogen or (C_{1-6})alkyl, and R^{11} is (i) (C_{1-6})alkyl optionally substituted by $-OR^{13}$, $-SR^{13}$, $-S(O)R^{13}$, $-S(O)_2R^{13}$, $-C(O)R^{13}$, $-C(O)OR^{13}$, $-C(O)NR^{13}R^{14}$, $-NR^{13}R^{14}$, $-NR^{14}C(O)R^{13}$, $-NR^{14}C(O)OR^{13}$,$-NR^{14}C(O)NR^{13}R^{14}$ or $-NR^{14}C(NR^{14})NR^{13}R^{14}$, wherein R^{13} is (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl and R^{14} at each occurrence independently is hydrogen or (C_{1-6})alkyl, or (ii) (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl or (iii) (C_{3-6})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl substituted by $-X^6OR^{15}$, $-X^6SR^{15}$, $-X^6S(O)R^{15}$, $-X^6S(O)_2R^{15}$, $-X^6C(O)R^{15}$, $-X^6C(O)OR^{15}$, $-X^6C(O)NR^{15}R^{16}$, $-X^6NR^{15}R^{16}$, $-X^6NR^{16}C(O)R^{15}$, $-X^6NR^{16}C(O)OR^{15}$, $-X^6NR^{16}C(O)NR^{15}R^{16}$, $-X^6NR^{16}C(O)OR^{16}$, $-X^6NR^{16}C(NR^{16})NR^{15}R^{16}$, wherein X^6 is a

bond or methylene, R^{15} is (C_{3-6})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-6})cycloalkyl(C_{0-3})alkyl, phenyl(C_{0-3})alkyl or hetero(C_{5-6})aryl(C_{0-3})alkyl and R^{16} is hydrogen or (C_{1-6})alkyl; wherein R^4 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, $-X^6NR^{17}R^{17}$, $-X^6NR^{17}C(O)OR^{17}$, $-X^6NR^{17}C(O)NR^{17}R^{17}$, $-X^6NR^{17}C(NR^{17})NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6SR^{17}$, $-X^6C(O)OR^{17}$, $-X^6C(O)NR^{17}R^{17}$, $-X^6S(O)_2NR^{17}R^{17}$, $-X^6P(O)(OR^{18})OR^{17}$, $-X^6OP(O)(OR^{18})OR^{17}$, $-X^6NR^{17}C(O)R^{18}$, $-X^6S(O)R^{18}$, $-X^6S(O)_2R^{18}$ and $-X^6C(O)R^{18}$ and when occurring within an aliphatic moiety are radicals independently selected from a group consisting of cyano, halo, nitro, $-NR^{17}R^{17}$, $-NR^{17}C(O)OR^{17}$, $-NR^{17}C(O)NR^{17}R^{17}$, $-NR^{17}C(NR^{17})NR^{17}R^{17}$, $-OR^{17}$, $-SR^{17}$, $-C(O)OR^{17}$, $-C(O)NR^{17}R^{17}$, $-S(O)_2NR^{17}R^{17}$, $-P(O)(OR^{17})OR^{17}$, $-OP(O)(OR^{17})OR^{17}$, $-NR^{17}C(O)R^{18}$, $-S(O)R^{18}$, $-S(O)_2R^{18}$ and $-C(O)R^{18}$, wherein X^6 is a bond or (C_{1-6})alkylene, R^{17} at each occurrence independently is hydrogen, (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl and R^{18} is (C_{1-6})alkyl or halo-substituted (C_{1-3})alkyl;

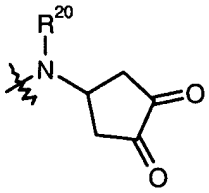
X^3 is a group of Formula (a), (b), (c), (d), (e), (f), (g) or (h):



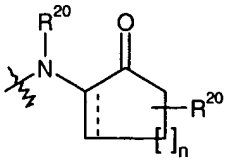
(a) (b) (c)



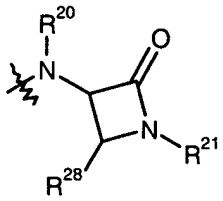
(d)



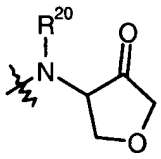
(e)



(f)



(g)



(h)

$\overline{\text{----}}$ represents a single bond, or a double bond;

X^7 represents aryl, heteroaryl or $NR^{20}R^{25}$;

n is 0, 1 or 2;

R^{20} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl and hetero(C_{5-12})aryl(C_{0-6})alkyl;

R^{21} is selected from the group consisting of hydrogen, (C_{1-9})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl, hetero(C_{8-12})-bicycloaryl(C_{0-3})alkyl, $-C(O)R^{26}$, $-C(S)R^{26}$, $-S(O)_2R^{26}$, $-C(O)OR^{26}$, $-C(O)N(R^{26})R^{27}$, $-C(S)N(R^{26})R^{27}$ and $-S(O)_2N(R^{27})R^{26}$;

R^{23} is selected from –H, (C_{1-6})alkyl, (C_{4-6})alkenyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl optionally substituted with amino, $-NHC(O)R^{15}$ or $-R^{15}$ wherein R^{15} is as described above;

R^{25} is selected from hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl,

hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-13})aryl(C_{0-6})alkyl, $-X^4NHR^{15}$, $-X^4S(O)_2R^{26}$ or $-X^4C(O)R^{17}NR^{17}C(O)R^{17}$ wherein R^{15}, R^{17} and X^4 are as described above;

R^{26} is selected from the group consisting of hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl, hetero(C_{5-12})aryl(C_{0-6})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl and hetero(C_{8-12})-bicycloaryl(C_{0-3})alkyl;

R^{27} is hydrogen, (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl;

R^{28} is R^{20} or $-O-C(=O)-R^{29}$;

R^{29} is (C_{1-6})alkyl, (C_{3-12})cycloalkyl(C_{0-3})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-3})alkyl, (C_{6-12})aryl(C_{0-3})alkyl, hetero(C_{5-12})aryl(C_{0-3})alkyl, (C_{9-12})bicycloaryl(C_{0-3})alkyl or hetero(C_{8-12})bicycloaryl(C_{0-3})alkyl;

wherein X^3 optionally further contains 1 to 5 substituents which when occurring within an alicyclic or aromatic ring system are radicals independently selected from a group consisting of (C_{1-6})alkyl, (C_{1-6})alkylidene, cyano, halo, nitro, halo-substituted (C_{1-3})alkyl, $-X^6NR^{17}R^{17}$, $-X^6NR^{17}C(O)OR^{17}$, $-X^6NR^{17}C(O)NR^{17}R^{17}$, $-X^6NR^{17}C(NR^{17})NR^{17}R^{17}$, $-X^6OR^{17}$, $-X^6C(O)R^{17}$, $-X^6OR^{15}$, $-X^6SR^{17}$, $-X^6C(O)OR^{17}$, $-X^6C(O)NR^{17}R^{17}$, $-X^6S(O)_2NR^{17}R^{17}$, $-X^6P(O)(OR^8)OR^{17}$, $-X^6OP(O)(OR^8)OR^{17}$, $-X^6NR^{17}C(O)R^{18}$, $-X^6S(O)R^{18}$, $-X^6S(O)_2R^{18}$ and $-X^6C(O)R^{18}$ and when occurring within an aliphatic moiety are radicals independently selected from a group consisting of cyano, halo, nitro, $-NR^{17}R^{17}$, $-NR^{17}C(O)OR^{17}$, $-NR^{17}C(O)NR^{17}R^{17}$, $-NR^{17}C(NR^{17})NR^{17}R^{17}$, $-OR^{17}$, $-SR^{17}$, $-C(O)OR^{17}$, $-C(O)NR^{17}R^{17}$, $-S(O)_2NR^{17}R^{17}$, $-P(O)(OR^{17})OR^{17}$, $-OP(O)(OR^{17})OR^{17}$, $-NR^{17}C(O)R^{18}$, $-S(O)R^{18}$, $-S(O)_2R^{18}$ and $-C(O)R^{18}$, wherein R^{15}, R^{17}, R^{18} and X^6 are as

described above; or

one of *N*-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers of compounds of formula Ix; or one of pharmaceutically acceptable salts and solvates of such compounds and the N-oxide derivatives, prodrug derivatives, protected derivatives, individual isomers and mixtures of isomers formula Ix.

14. A compound of claim 13, wherein R^{23} is selected from (C_{1-6})alkyl, (C_{4-6})alkenyl, (C_{3-12})cycloalkyl(C_{0-6})alkyl, hetero(C_{5-12})cycloalkyl(C_{0-6})alkyl, (C_{6-12})aryl(C_{0-6})alkyl or hetero(C_{5-12})aryl(C_{0-6})alkyl optionally substituted with amino, -NHC(O)R^{15} or $-R^{15}$ wherein R^{15} is as described above;

15. A compound of claim 13, selected from the group consisting of:

Morpholine-4-carboxylic acid [1-(1-benzoyl-4-oxo-pyrrolidin-3-ylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide;

Morpholine-4-carboxylic acid [1-(1-benzenesulfonyl-4-oxo-pyrrolidin-3-ylcarbamoyl) 2-phenylmethanesulfonyl-ethyl]-amide;

4-{2-[(Morpholine-4-carbonyl)-amino]-3-phenylmethanesulfonyl-propionylamino}-3-oxo-azepane-1-carboxylic acid benzyl ester;

Morpholine-4-carboxylic acid [1-(3-benzenesulfonylamino-2-oxo-propylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide; or

N-{1*S*-[1*S*-(4-Methoxyphenylsulfamoylmethyl)-3-phenylpropylcarbamoyl] 2-benzylsulfonylethyl}-morpholine-4-carboxamide.

16. A compound of claim 13, selected from the group consisting of:

Morpholine-4-carboxylic acid [(R)-1-(6-oxo-cyclohex-1-enylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide;

Morpholine-4-carboxylic acid [(R)-2-cyclopropylmethanesulfonyl-1-(6-oxo-cyclohex-1-enylcarbamoyl)-ethyl]-amide;

Morpholine-4-carboxylic acid [(R)-1-(3,4-dioxo-cyclopentylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide;

Morpholine-4-carboxylic acid [2-(2-difluoromethoxy-phenylmethanesulfonyl)-1-(2-oxo-cyclohexylcarbamoyl)-ethyl]-amide;

Morpholine-4-carboxylic acid [2-(2-difluoromethoxy-phenylmethanesulfonyl)-1-(2-oxo-cyclopentylcarbamoyl)-ethyl]-amide;

Morpholine-4-carboxylic acid [2-(2-difluoromethoxy-phenylmethanesulfonyl)-1-(2-oxo-cyclobutylcarbamoyl)-ethyl]-amide;

(Morpholine-4-carboxylic acid [1-(2-benzylcarbamoyl-2-oxo-ethylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide);

Acetic acid 3-{2-[(morpholine-4-carbonyl)-amino]-3-phenylmethanesulfonyl-propionylamino}-4-oxo-azetidin-2-yl ester;

Morpholine-4-carboxylic acid [1-(2-hydroxy-1,1-dimethyl-3-oxo-3-phenyl-propylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide;

Morpholine-4-carboxylic acid [1-(4-oxo-tetrahydro-furan-3-ylcarbamoyl)-2-phenylmethanesulfonyl-ethyl]-amide; or

Morpholine-4-carboxylic acid [2-(2-difluoromethoxy-phenylmethanesulfonyl)-1-(1,1-dimethyl-2,3-dioxo-3-phenyl-propylcarbamoyl)-ethyl]-amide.